



The Latest Advanced Packaging Technology Trends

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Semiconductor technology is driven by exploding data traffic from an increasing number of smartphone subscribers and more data usage from higher resolution images as well as increased video content. All these data are from smartphone, artificial intelligence (AI), internet of things (IoT), automotive, 5G communications and other applications. To meet these technology trends, the semiconductor industry requires advanced packaging technologies.

To complicate the problem, each industry segment needs different requirements for its packaging solution. For example, a smartphone needs a small form factor to put more packages into limited space to manage the ever-increasing features of the smartphone which include various sensors and radio frequency (RF) components. IoT needs increased integration, which includes multiple sensors, processors and wireless connectivity, typically for Wi-Fi and Bluetooth. Automotive needs additional functions with more advanced processing power for advanced driver-assistance systems (ADAS), infotainment and electric vehicles (EVs) in addition to high reliability for passenger safety. High performance computing, which includes datacenters, artificial intelligence, graphics processing units (GPUs) and servers, is driven by powerful processing capability and the need for a high-performance packaging solution with effective thermal dissipation, essential for device cooling.

In this presentation, the latest advanced packaging technology trends including Package-on-Package (PoP), System in Package (SiP), flip chip ball grid array (FCBGA) and 2.5D designs will be reviewed.

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